

exposed to or occluded from an activation signal, and communicatively coupled to the overlay, said at least one element being configured such that the change causes the substrate to reconfigure and the wrinkles to form or modify upon the surface as a result thereof.

2. The system as claimed in claim 1, wherein the substrate is selectively shiftable between the first elastic modulus or Poisson's ratio, and a normal elastic modulus or Poisson's ratio greater than the second elastic modulus or Poisson's ratio.

3. The system as claimed in claim 2, wherein the substrate is formed of shape memory polymer.

4. The system as claimed in claim 1, wherein the substrate is pre-strained, and the change causes the substrate to undo the pre-strain.

5. The system as claimed in claim 4, wherein the substrate is pre-strained bi-axially.

6. The system as claimed in claim 1, wherein said at least one element is an actuator drivenly coupled to the substrate.

7. The system as claimed in claim 6, wherein the actuator includes a shape memory wire.

8. The system as claimed in claim 6, wherein the actuator is embedded within and traverses the substrate.

9. The system as claimed in claim 6, wherein the actuator forms a mesh, and is operable to effect bi-axial loading.

10. The system as claimed in claim 6, wherein the actuator is external to the substrate.

11. The system as claimed in claim 6, wherein the actuator includes a sheet disposed beneath the substrate.

12. The system as claimed in claim 6, wherein said at least one element is drivenly coupled to the substrate along multiple axes.

13. The system as claimed in claim 12, wherein a plurality of elements are individually exposable and/or occluded from the signal, so as to be separately activated and deactivated respectively.

14. A system for selectively forming wrinkles, or modifying the amplitude, wavelength, and/or pattern of existing wrinkles upon a surface, said system comprising:

a reconfigurable substrate presenting a first elastic modulus and Poisson's ratio;

an overlay defining the surface, adhered to the substrate, and presenting a second elastic modulus or Poisson's ratio greater than the first; and

a mechanical actuator drivenly coupled to the substrate, said actuator being operable to reconfigure the substrate and cause the wrinkles to form or modify upon the surface as a result thereof.

15. The system as claimed in claim 14, wherein the substrate is formed of a urethane elastomer, and the overlay is formed of mylar and presents a thickness of approximately 0.00127 centimeters.

16. The system as claimed in claim 14, wherein the substrate is formed of a urethane elastomer, and the overlay is formed of a urethane adhesive.

17. The system as claimed in claim 14, further comprising: first and second opposite end caps fixedly secured to and adjacent the substrate,

said actuator being drivenly coupled to at least one end cap.

18. The system as claimed in claim 14, wherein the actuator presents multiple stroke lengths, and is operable to variably reconfigure the substrate and variably cause the wrinkles to form or modify upon the surface.

19. The system as claimed in claim 14, wherein the substrate is flexible, and further comprising:

a plurality of overlapping rigid members embedded within the substrate,

said actuator being drivenly coupled to the members.

20. The system as claimed in claim 14, wherein the substrate is flexible and further comprising:

a reconfigurable scissor-jack fixture fixedly coupled to the substrate and driven by the actuator.

* * * * *